

# **2015 NAAQS for Ozone**

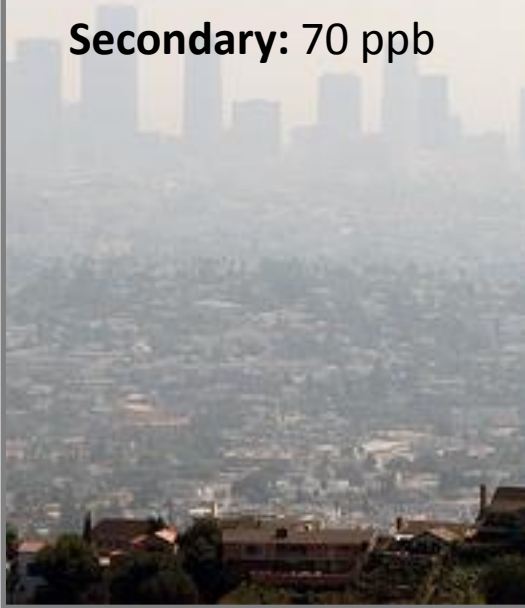
December 2015  
Mass. SIP Steering



## **2015 Final Ozone Standards**

**Primary:** 70 ppb

**Secondary:** 70 ppb



- Based on science, the Administrator determined that the 2008 standard ( 75 ppb ) is not adequate to protect public health.
- 70 ppb is requisite to protect public health with an adequate margin of safety.
- 70 ppb is below the level shown to cause adverse health effects in the clinical studies.

# 2015 Secondary Standard



- EPA set the secondary (welfare) standard at 70 ppb.
- EPA determined that a standard that generally limits cumulative, seasonal exposures above a W126 index level of **17** parts per million-hours (ppm-hours) will provide requisite protection.
  - W126 is a super-sophisticated seasonal index used to measure ozone damage to sensitive species.
- Analyses of data from air quality monitors show that a level of **70 ppb** will limit cumulative, seasonal exposures above a W126 index of 17 ppm-hours, averaged over three years.

# Air Quality Index



| AQI Category                          | Index Values | Breakpoints in the 2008 AQI<br>(ppb, 8-hour average) | Updated Breakpoints<br>(ppb, 8-hour average) |
|---------------------------------------|--------------|--|--|
| <b>Good</b>                           | 0 - 50       | 0-59   | 0-54   |
| <b>Moderate</b>                       | 51 - 100     | 60-75  | 55-70  |
| <b>Unhealthy for Sensitive Groups</b> | 101 – 150    | 76-95  | 71-85  |
| <b>Unhealthy</b>                      | 151 – 200    | 96-115   | 86-105                                       |
| <b>Very Unhealthy</b>                 | 201 – 300    | 116-374  | 106-200                                      |
| <b>Hazardous</b>                      | 301 –500     | 375 to<br>the Significant Harm Level*                | 201 to<br>the Significant Harm Level*        |

*\*The Significant Harm Level for ozone is 600 ppb, two-hour average*



# **Monitoring Updates**

# Monitoring Updates



- Generally finalized as proposed:
  - Updates to the Photochemical Assessment Monitoring Stations (PAMS)
  - Extension of ozone monitoring season
  - Approved additional Federal Reference Method
  - New data handling provisions for determining compliance with the revised standards

# Ozone Monitoring Seasons

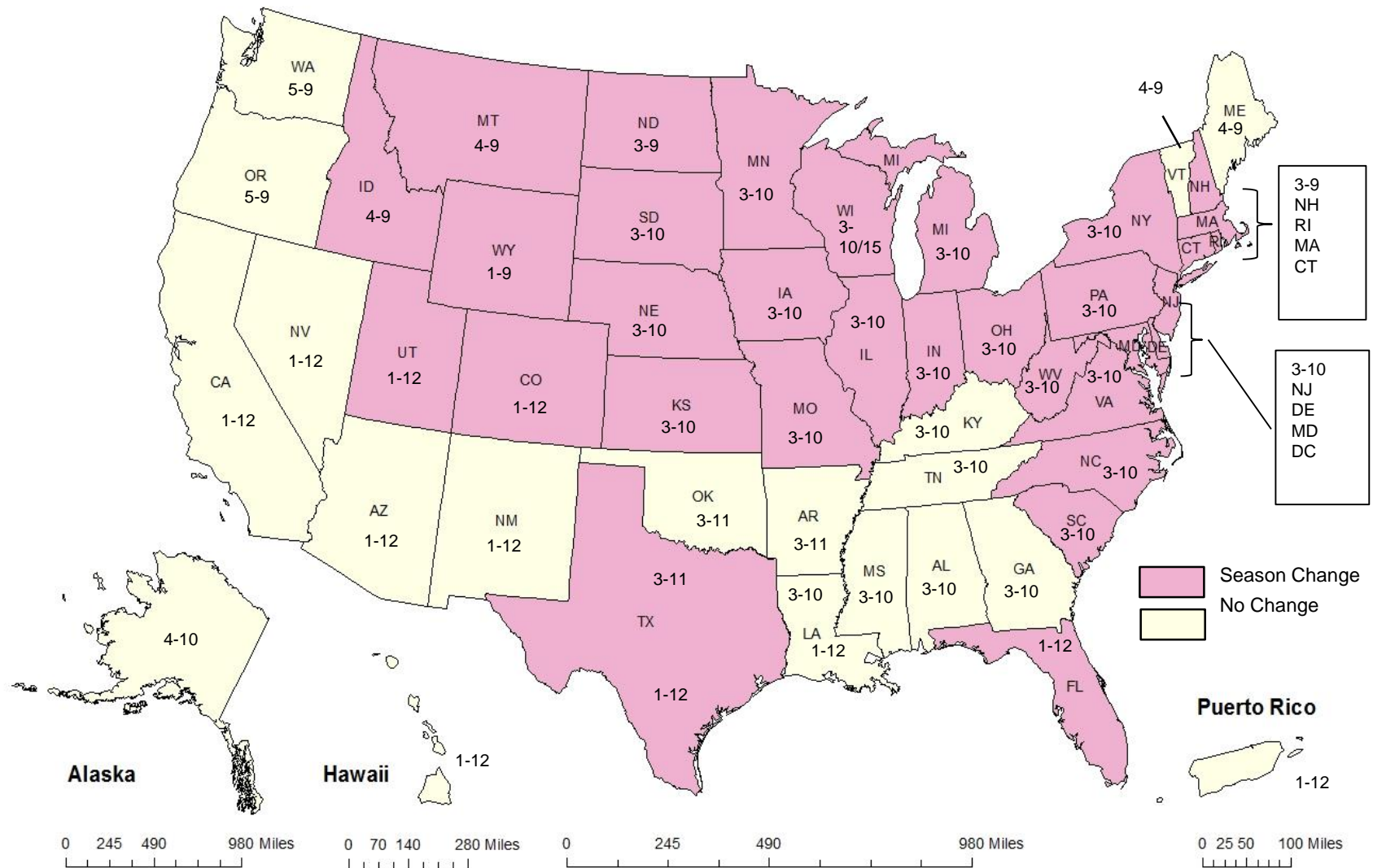


- Final rule extends ozone monitoring season for 32 states:
  - One month extension for 22 states and D.C.;
  - Additional extensions of 2 to 7 months for 10 states
  - Year-round season for all NCore sites.
- EPA Regional Administrators is allowed to approve changes to states' ozone monitoring season without rulemaking.
- Impact mitigated by the high proportion of monitors already being voluntarily operated on year-round basis.
- Will not affect the CSAPR trading program ozone season (remains May 1 – Sept 1).

# Ozone Monitoring Seasons



Effective January 1, 2017





# Federal Reference Method (FRM)



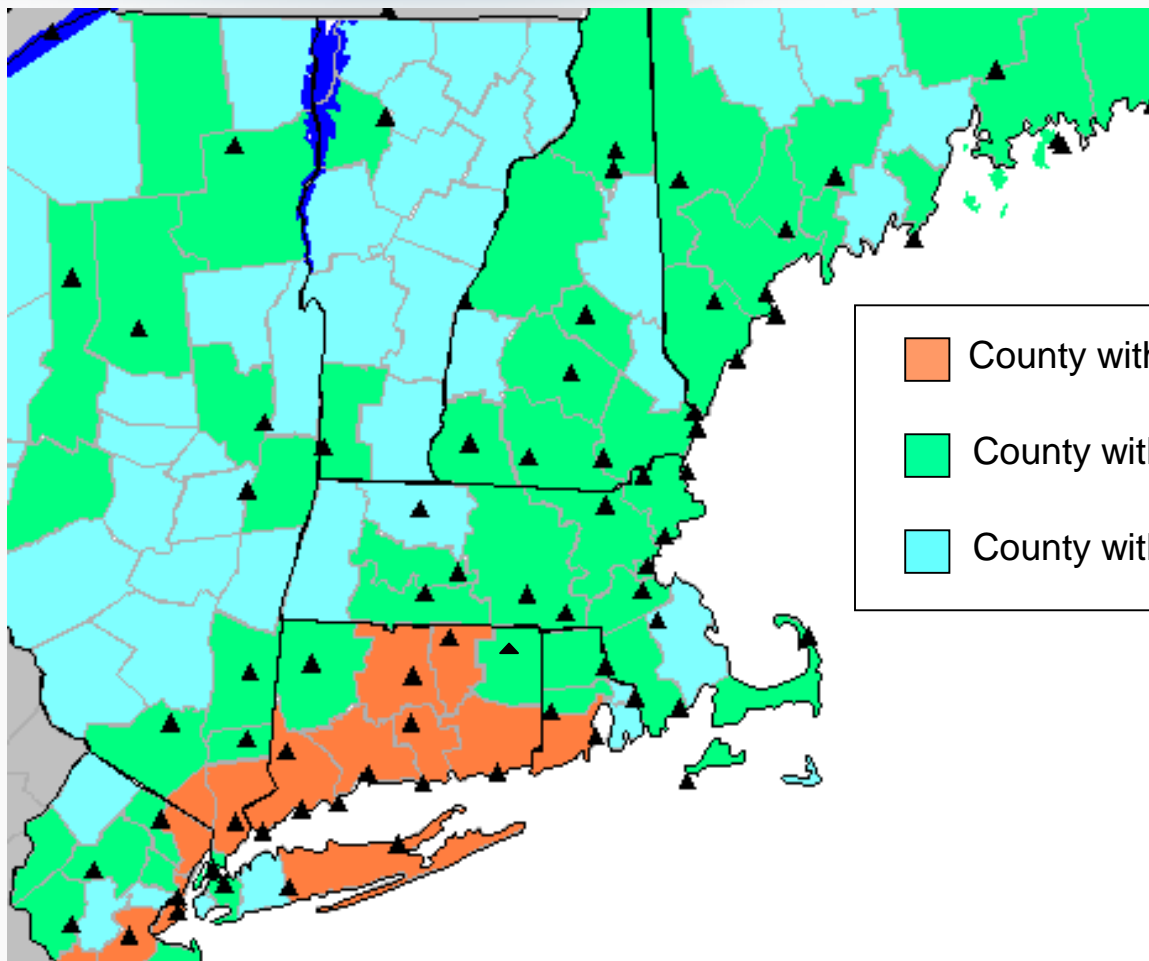
- Updated FRM for ozone includes an additional method that is based on advanced technology and monitoring methods.
- States are not required to replace their existing ozone monitors.
- Current ozone monitors will continue to meet EPA requirements.

# Area Designations



- State designation recommendations, due **Fall 2016** and should be based on 2013-2015 and may include preliminary 2016 data.
- Final area designations due **Fall 2017** - based on **2014-2016** final DVs.
- All of Mass. Should be attainment

# Counties with monitors that do not meet the updated standards



- County with violating monitor.
- County with attaining monitor.
- County with no monitor or incomplete data.

**Based on 2013 – 2015\* monitoring data**

# Ozone from Background Sources



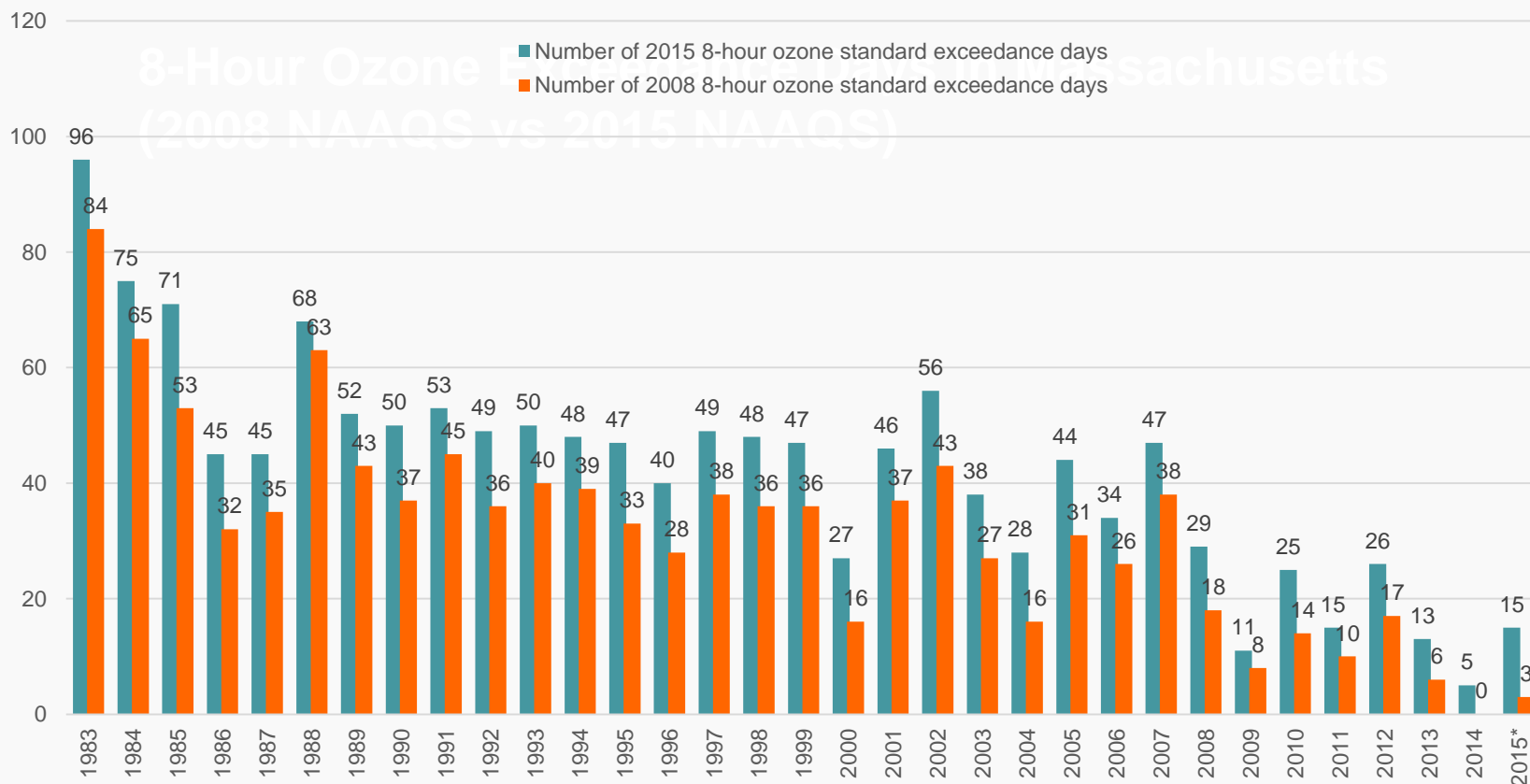
- Background ozone most important out west.
- Background ozone refers to ozone that forms from natural sources, such as wildfires or stratospheric intrusions, and from man-made pollution from sources outside the U.S.
- Relevant Clean Air Act provisions
  - Exceptional event exclusions
  - Section 179B international emissions

# Ozone Transport – 2015 NAAQS



- Transport SIPs are a state obligation, however, EPA recognizes that it can assist states with some of the technical analyses related to transport.
- EPA is planning to do source apportionment modeling to provide contribution information for the 2015 NAAQS to help states begin developing their transport SIPs.
  - We intend to make this information available in Fall 2016.

# Exceedance Days in Massachusetts

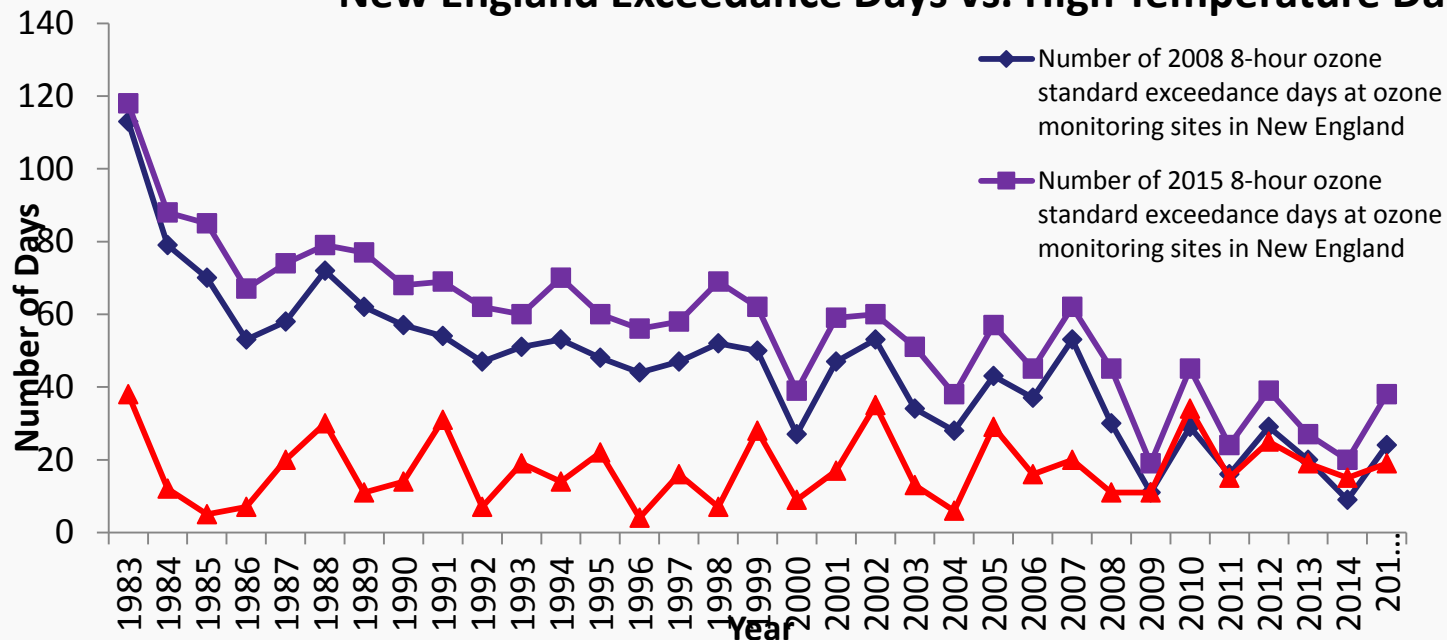


\* 2015 ozone data is preliminary and subject to change

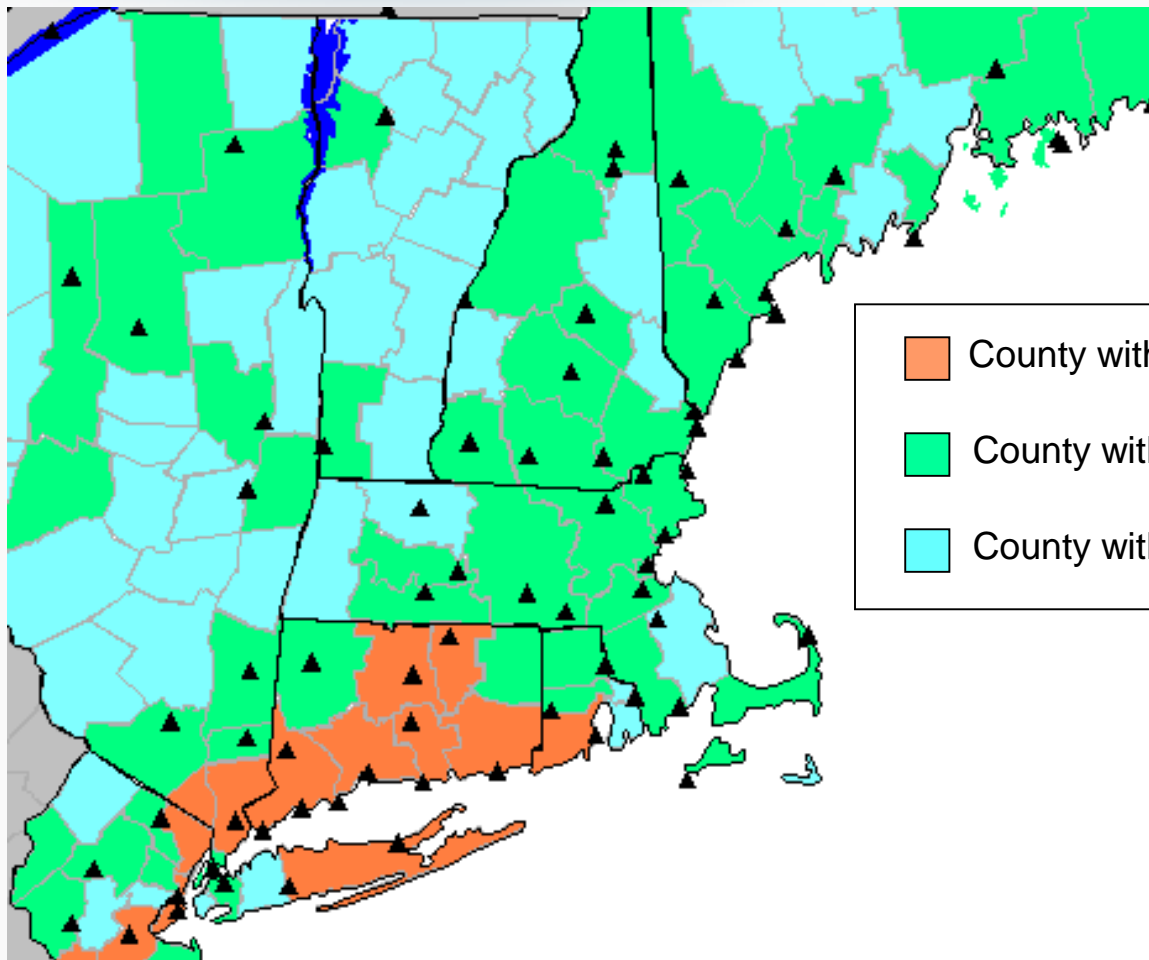
# Trend in Exceedance Days New England



## New England Exceedance Days vs. High Temperature Days



# Counties with monitors that do not meet the updated standards



- County with violating monitor.
- County with attaining monitor.
- County with no monitor or incomplete data.

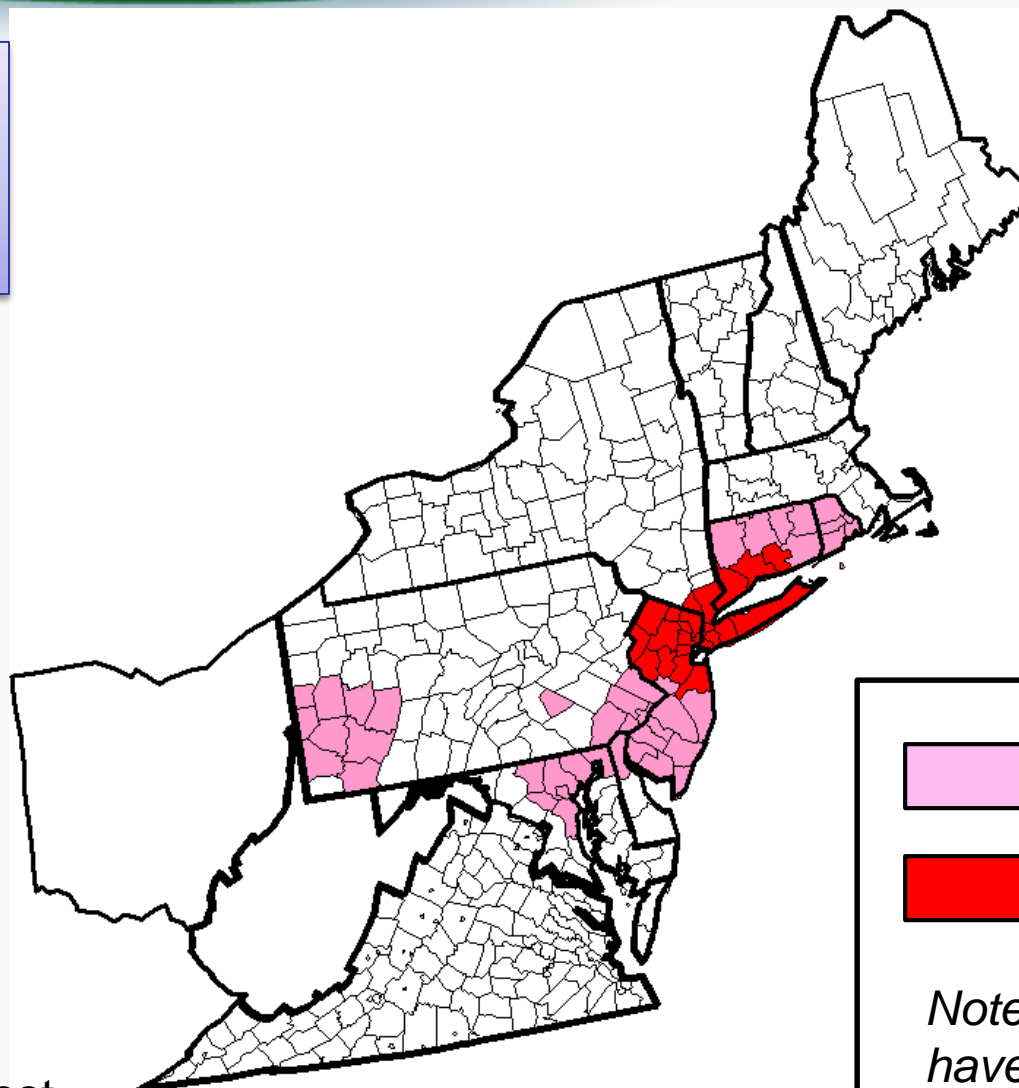
**Based on 2013 – 2015\* monitoring data**



# Potential Nonattainment – 70ppb NAAQS



Based on  
preliminary  
2013-2015  
ozone values



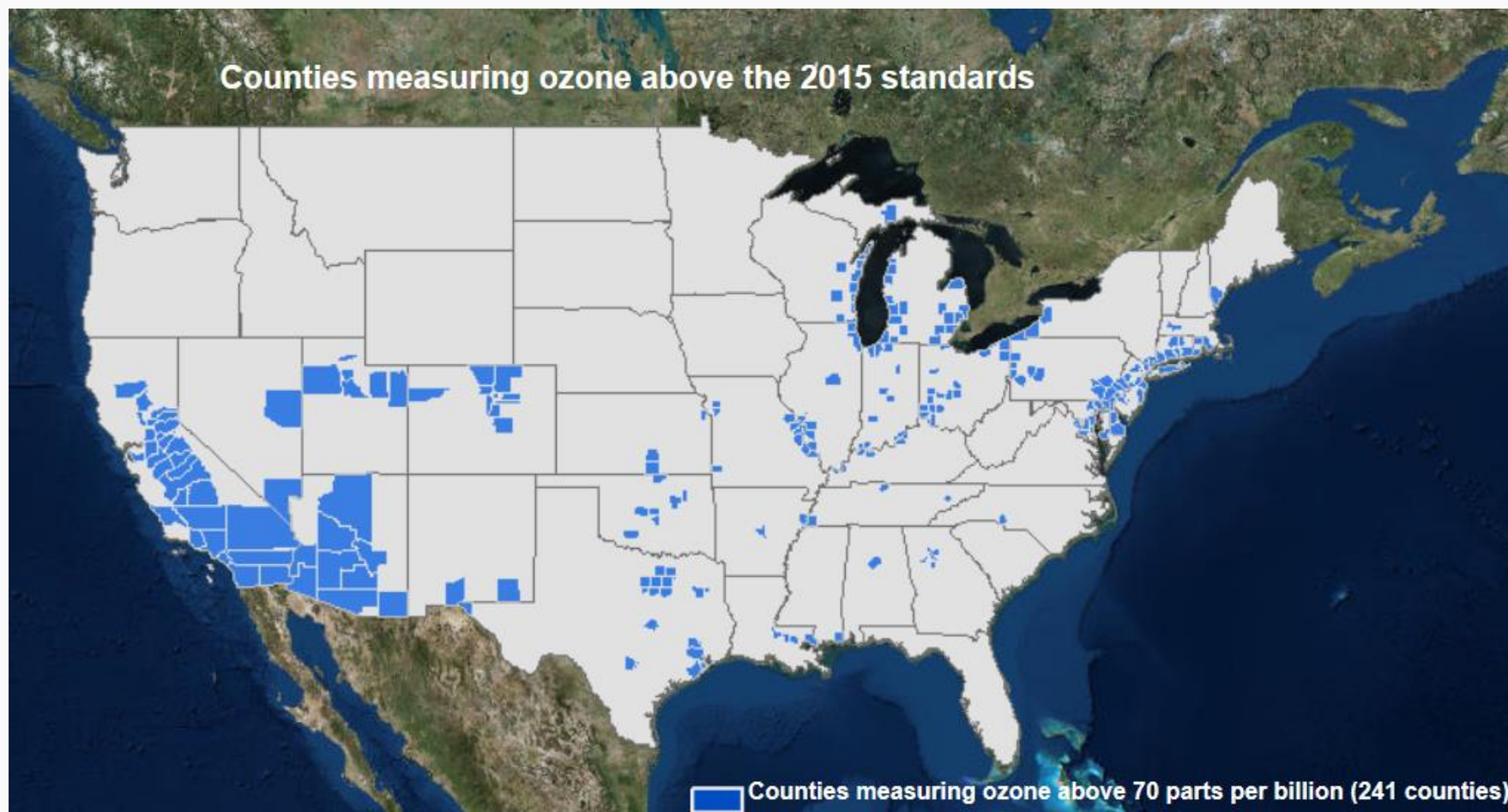
 **Marginal**

 **Moderate**

*Note: Not all counties  
have ozone monitoring*

Based on CBSA  
Boundaries in most  
cases

# Counties with monitors that do not meet the updated standards



Based on 2012 – **2014** monitoring data

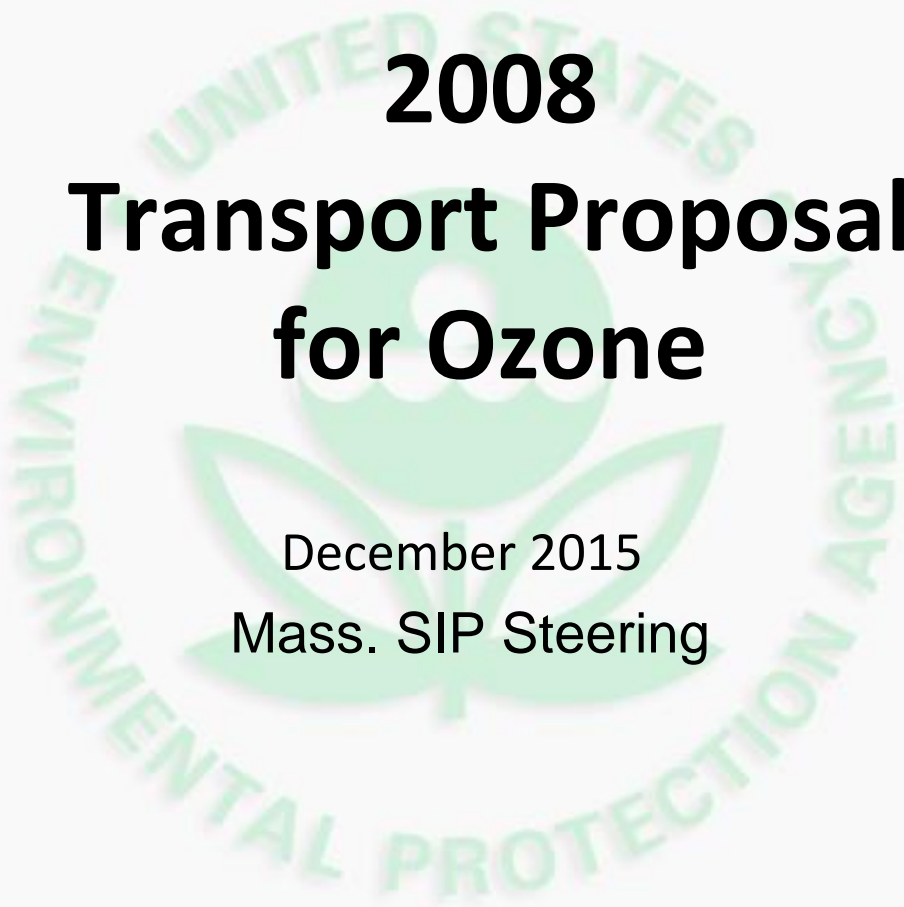
# Designations and Implementation: Tentative Timeline



| <b>Designation Schedule</b>                      |  |   |
|--|--|---|
|  | <b>Schedule</b>  | <b>Tentative Date</b>   |
| State and Tribe Recommendations                  | Within 1 year after NAAQS promulgation   | October 1, 2016   |
| EPA responds to state and tribal recommendations |  | June 1, 2017  |
| Final Designation                                | Within 2 years after NAAQS promulgation (Administrator has discretion to extend the deadline by one year to collect sufficient information.) | October 1, 2017<br>Effective date may vary.<br>(Air quality data years: 2014 –2016) |
| <b>Implementation Schedule</b>                   |  |   |
| Infrastructure SIP                               | Within 3 years after NAAQS promulgation  | October 2018  |
| Attainment Plans Due                             | Within 36 - 48 months after designations depending on classification   | October 2020-2021   |

| <b>Attainment Schedule by Classification</b> |                          |
|--|--------------------------|
| <b>Classification</b>                        | <b>Schedule*</b>         |
| Marginal                                     | 3 years to attain        |
| Moderate                                     | 6 years to attain        |
| Serious                                      | 9 years to attain        |
| Severe                                       | 15 to 17 years to attain |
| Extreme                                      | 20 years to attain       |

\*Areas must attain as expeditiously as practical, but not later than the schedule in the table. Two one-year extensions are available in certain circumstances based on air quality.



# **2008 Transport Proposal for Ozone**

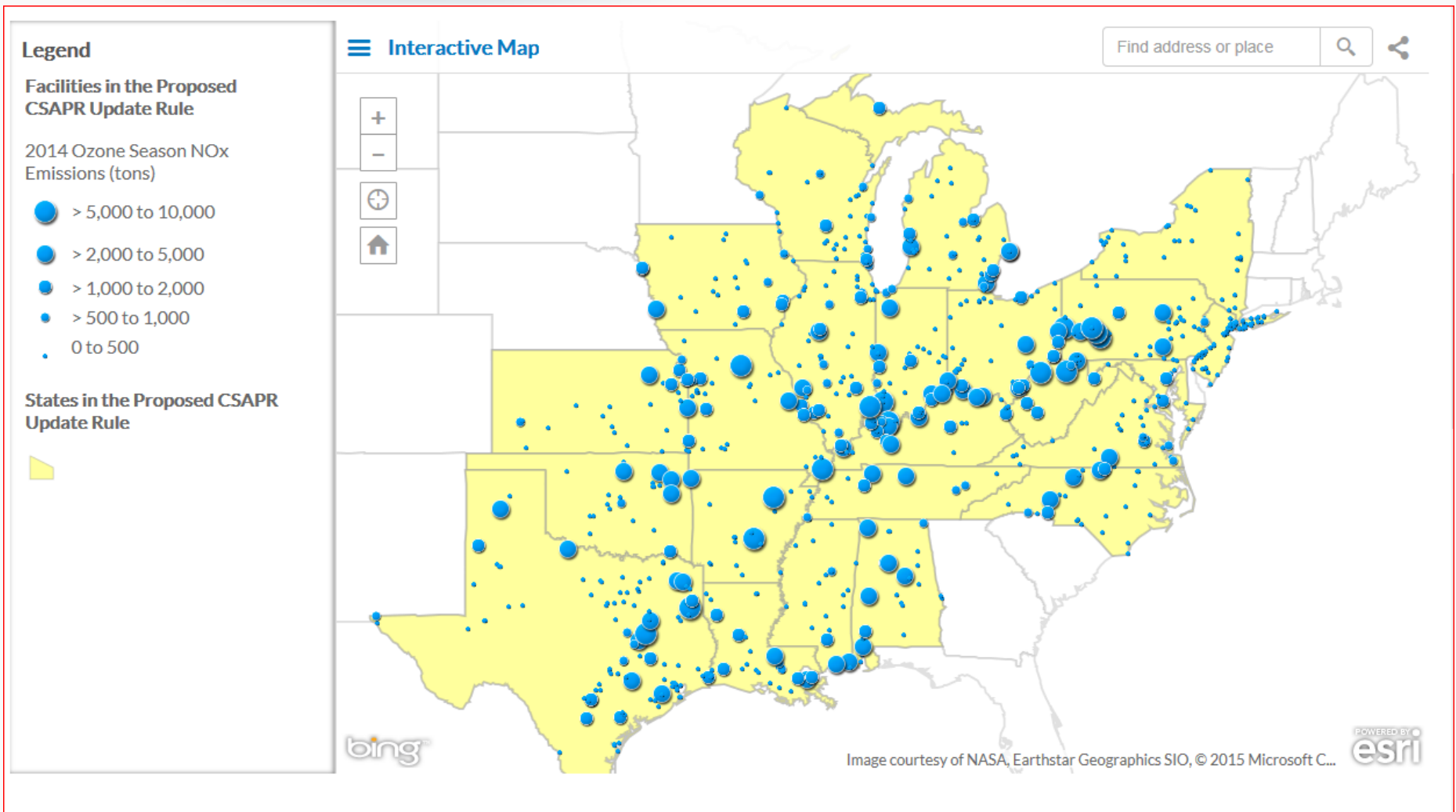
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# Transport (CSAPR) rule- Proposal



- On November 16, 2015, the EPA's Administrator signed a notice of proposed rulemaking announcing plans for reducing impacts from the interstate transport of nitrogen dioxide (NO<sub>x</sub>).
- The rule, when finalized, will help states achieve EPA's **2008** ozone standard.
- The rule's requirements will become **effective in 2017**, and covers emissions from sources in **23 states**.
- Massachusetts is not one of the 23 covered states, but will benefit from the emission reductions achieved by the program.
- Reducing the transport of ozone season NO<sub>x</sub> pollution that crosses state borders will help downwind states meet and **maintain** national ozone standards.

# States covered by proposed update to the CSAPR rule, and location of affected sources.





# Update to Transport (CSAPR) rule (cont.)



- EPA will accept comments on the proposed rulemaking up through 45 days after publication in the Federal Register.
- For more information about EPA's proposed update to the CSAPR rule, including a fact sheet, interactive maps, and the rule itself, see:
- <http://www2.epa.gov/airmarkets/proposed-cross-state-air-pollution-update-rule>